EPA

United States
Environmental Protection
Agency

Explanation of Significant Differences

Solitron Microwave Site
Port Salerno, Martin County, Florida April 2005

The EPA announces changes to Solitron Microwave Site remedy:

- Defer requirement for in-situ chemical oxidation groundwater treatment.
- Document why additional soil was excavated and removed.
- Add soil cleanup standard for vinyl chloride.
- Contact Bill Denman, 1-800-435-9234, denman.bill@epa.gov or Aaron Cohen, 1-850-245-8962, aaron.cohen@dep.state.fl.us for more information.

Introduction

The United States Environmental Protection Agency (EPA), in cooperation with the Florida Department of Environmental Protection (FDEP), announces three significant changes to the cleanup remedy for the Solitron Microwave Site (the Site) in Port Salerno, Florida. The changes are (1) defer the requirement for in-situ chemical oxidation to supplement the monitored natural attenuation for groundwater treatment, (2) document the need for the additional excavation and soil removal that took place when the main Site building was razed, and (3) add a soil cleanup standard for vinyl chloride.

This fact sheet, called an Explanation of Significant Differences, is being issued as part of the EPA's public participation requirements under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and Section 300.435(c)(2)(i) of the National Contingency Plan (NCP), 40 CFR Part 300.

The EPA based changes in the remedy for the Solitron Microwave Site on documents in the Administrative Record file for the Site. This file includes a copy of the November 1, 2000, Record of Decision, which authorized Site cleanup. This fact sheet will become part of the Administrative Record file, in accordance with Section 300.825(a)(2) of the National Contingency Plan. The Solitron Microwave Site Administrative Record file is available locally at the Robert Morgade Public Library, 5851 SE Community Drive in Stuart, Florida. File documents can be reviewed and copied at the library.

Background Information

The Solitron Microwave Site covers 20 acres along Cove Road, approximately 3/4 mile east of U.S. Highway 1 in Port Salerno, Martin County, Florida. The Site is surrounded by a residential area consisting of a gated condominium complex and many private homes. In the past, approximately 187 private homes north and east of the Site obtained their drinking water from individual private wells.

From 1968 until January 1987, the Solitron Microwave Company operated a plating and manufacturing facility at the Site. The facility made microwave components, miniature-size frequency connectors and cable, and solid state resistor networks associated with electroplating. From 1963 to 1968, General R.F. Fittings reportedly conducted plating operations similar to Solitron's operations at the Site. The EPA and FDEP investigated the Site during the 1990s and determined that groundwater was contaminated with volatile organic compounds at levels above EPA and FDEP maximum contaminant levels. The contaminants of concern are tetrachloroethene (PCE); trichloroethene (TCE); 1,1-dichloroethene (1,1-DCE); *cis*-1,2-dichloroethene (*cis*-1,2- DCE); *trans*-1,2-dichloroethene (*trans*-1,2-DCE); and vinyl chloride.

Roy F. Weston, Inc., prepared a remedial investigation and feasibility study and conducted a human health risk assessment between 1998 and 2000. The human health risk assessment indicated that drinking contaminated groundwater would pose the greatest potential risk to human health. Although contaminants of concern were found in soil on and near the Site, the risk assessment indicated that coming into direct contact with this soil contamination did not pose an unacceptable threat to human health or the environment. However, some of the contaminant levels were high enough to continue to pollute the groundwater.

On March 5, 1998, the EPA proposed the Site to the National Priorities List (NPL). On July 27, 1998, the Site was added to the NPL

Selected Remedy

The Solitron Microwave Record of Decision describes Site contamination and the selected remedy. Before the Record of Decision was completed, the EPA held a public meeting and a 30-day public comment period to solicit community participation in the decision-making process. The EPA selected a remedy to address Site contamination based on federal environmental laws, a detailed analysis of alternatives, and public and State comments.

Groundwater

The remedy included in-situ chemical oxidation to clean up groundwater contaminants that exceeded the State of Florida Natural Attenuation Default Criteria. Groundwater contaminants above State or Federal drinking water levels, but below the State's Natural Attenuation Default Criteria would be cleaned up using monitored natural attenuation.

Soil

The remedy stipulated excavation and off-site disposal of approximately 330 cubic yards (cy) of soil from the former Industrial Waste Treatment Plant Area on the Site. Soils in this area were contaminated with volatile organic compounds considered to be a potential source of groundwater contamination. Volatile organic compounds were also detected in soil beneath the main Solitron building. The remedy assumed, however, that the building's concrete slab would be left in place, acting as a cap over contaminated soil and preventing contamination from leaching into the groundwater.

Cleanup Goals

Groundwater cleanup goals for the Site remedy are based on meeting State or Federal primary drinking water standards. Although the remedy focuses on groundwater cleanup, the EPA authorized some soil cleanup to provide greater groundwater protection. As a result, soil cleanup goals for the Site are much lower than necessary to protect human health from direct contact with the soil. Nevertheless, soil cleanup goals to prevent further groundwater contamination were established for *cis*-1,2-DCE; PCE; and TCE.

The EPA believes that the Site remedy, which is based on an EPA-approved, site-specific risk assessment, protects human health and the environment. Every 5 years, the EPA will review the Site remedy to ensure progress in meeting cleanup goals and that the remedy remains protective.

Rationale for Remedy

The EPA chose the selected remedy because the Agency believed it to be the most cost-effective, cleanup strategy. The selected groundwater remedy would minimally impact area residents, as compared to the other remedies evaluated. Also, in the short-term, the groundwater remedy would be more effective than the other alternatives evaluated because the oxidation treatment phase was expected to reduce the time needed to reach cleanup levels. Even though the capital cost for the selected groundwater remedy was higher than for the other remedies evaluated, the operation and maintenance (O&M) costs were projected to be much lower.

Explanation of Significant Differences

When the Record of Decision was written, it was thought that in-situ chemical oxidation groundwater treatment would be needed because a large amount of groundwater contamination exceeded the State's Natural Attenuation Default Criteria (based on historical data). In a letter, dated December 6, 2002, the State and EPA discussed the groundwater data from the 2002 remedial design sampling events. Sampling results indicated that volatile organic compound concentrations had decreased significantly between 1999 and 2002.

The 2002 sampling data also showed a decrease in PCE and TCE concentrations and an increase in degradation products, which indicates that the contamination was degrading naturally. In addition, in 2002, only two groundwater monitoring wells contained contaminant concentrations above the State's Natural Attenuation Default Criteria.

The EPA, in consultation with the FDEP, believes chemical oxidation is no longer needed due to: 1) the accelerated natural attenuation occurring at the site and: 2) the limited volume of groundwater exceeding the State's Natural Attenuation Default Criteria. The EPA and the State of Florida determined that the best way to address the water exceeding the State's Natural Attenuation Default Criteria is to continue to sample the two wells and determine if the contaminant concentrations will naturally attenuate over time. If the groundwater contaminants at the two well locations do not naturally attenuate to below the State's Natural Attenuation Default Criteria, then chemical oxidation will be revisited.

Significant Difference: The EPA and FDEP agree that monitored natural attenuation of groundwater is the appropriate course of action for all contaminated groundwater at the Solitron Microwave Site. As a result, the EPA is deferring, at this time, the requirement in the remedy to supplement monitored natural attenuation with in-situ chemical oxidation.

Significant Difference: The Record of Decision also required that contaminated soil from the rear of the building in the former Industrial Waste Treatment Plant Area be excavated and disposed of in an appropriate offsite landfill. The soil in this area was contaminated with volatile organic compounds and considered to be a potential source of future groundwater contamination. As a result, EPA excavated approximately 532 cubic yards (692 tons) of contaminated soil from this area. There also was contaminated soil beneath the building. The remedy, however, assumed that the main building's concrete slab would be left in place, acting as a cap over contaminated soils beneath the building.

In early 2003, the Site property was sold, and in August 2003, the new owner demolished and removed the main building. As a result, EPA excavated an additional 497 cubic yards (646 tons) of contaminated soil from the area previously covered by the main building. The last of the contaminated soil was taken to an off-site landfill in June 2004. This fact sheet documents the additional excavation and soil removal needed and removes the requirement for an institutional control to ensure that the building slab remains in tact. As required in the Record of Decision, a notice has been placed on the property deed preventing the use of on-site contaminated groundwater. An irrigation well may be installed on an uncontaminated portion of the property up-gradient from the contaminant plume. This irrigation well will be located and designed so that it will not affect the groundwater plume or the remedy.

Significant Difference: The ROD did not specify a cleanup goal for vinyl chloride in soil and did not identify vinyl chloride as a contaminant of concern. Vinyl chloride, however, was considered during soil sampling and removal activities because it is a degradation product of the contaminants of concern. The soil cleanup standard for vinyl chloride is 0.007 parts per million, based on FDEP's levels for protection of groundwater.

Changes in the remedy outlined in this fact sheet may be altered somewhat as a result of design and construction processes. The EPA will document changes to the remedy, as appropriate, including entries in the Administrative Record file, with an Explanation of Significant Differences fact sheet or an amendment to the Record of Decision.

Statutory Determination

Changes to the Record of Decision documented in this fact sheet protect human health and the environment, comply with applicable or relevant and appropriate Federal and State requirements, are cost effective, and use permanent solutions to the maximum extent practicable for this Site. These changes, which have FDEP support, comply with CERCLA Section 121.

Site Status

During remedial design, the EPA collected groundwater samples in May 2002, August 2002, June 2003, June 2004, July 2004, and October, 2004. To date, groundwater results indicate natural attenuation is occurring. The EPA and FDEP are reviewing the final monitored natural attenuation groundwater sampling plan.

As part of the Plan, the EPA expects a few additional groundwater monitoring wells will be installed, as necessary, to complete the monitored natural attenuation, monitoring well network. In addition, damaged monitoring wells may be replaced, and other wells may be abandoned as the contaminant concentrations decrease.

The Plan will include the scope and schedule for sampling and describe how the results will be presented. The sampling reports will include presentation of the current plumes and groundwater elevations in graphical and tabular format, presentation of historical contaminant concentration and groundwater level trends in graphical format, and recommendations for future sampling.

In addition, the reports will include a map showing the homes who have connected to the municipal water supply and those continuing to obtain water from private wells. This map will be updated periodically. It will be superimposed onto the plume delineation maps after each sampling event to identify any private wells that could potentially be contaminated due to offsite plume migration. The well owners and Martin County will then be notified and appropriate action taken. The EPA will continue to monitor the groundwater regularly until the cleanup standards have been met.

In May 2003, public water lines were extended to the 187 homes that had been obtaining their drinking water from individual private wells. Only those homes whose private drinking water wells had contaminant levels above drinking water standards were initially connected to public water. However, the impact fees were paid and water meters were placed in all yards. To date, a total of 144 of the 187 homes have connected to the public water supply.

Redevelopment

The 20 acre property has been purchased and is being redeveloped into the Port Salerno Industrial Park which will provide 150,000 square feet of warehouse and light industrial space for builders such as plumbing contractors, electricians, and marble wholesalers. This will provide a clean, safe location and should help revitalize the local economy. More information on the redevelopment of this site is presented in the EPA's reuse success story fact sheet "Sites in Reuse - Solitron Microwave Site" which is available at: **www.epa.gov/region4/waste/reuse/fl/solitronmicsuccess.pdf**.

For more information, please contact...

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Information Repository

Robert Morgade Public Library
5851 S.E. Community Drive
Stuart, FL 34997
Phone: 772-463-3245
Hours of Operation:
Mon, Tues, Fri: 10 to 5:30,
Wed: 12 to 8; Thurs: 10 to 8
Closed on Sunday

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